SCIENCE NARRATIVES:

THE CONSTRUCTION, MOBILISATION AND VALIDATION OF HYDRO TASMANIA'S CASE FOR BASSLINK

By

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Submitted in fulfilment of the requirements for the degree of Doctor of Philosophy, Centre for Environmental Studies, Department of Geography and Environmental Studies, University of Tasmania
(April 2004)

This thesis contains no material that has been accepted for the award of any other higher degree or graduate diploma in any tertiary institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person, except when due reference is made in the text of the thesis.

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ABSTRACT

The central focus of this thesis is the role of narratives in the construction, mobilisation and validation of scientific knowledge claims. With an epistemological commitment to constructivism, which conceptualises scientific knowledge as the product of a process (and not something revealed), the regulatory domain of impact assessment in respect of Basslink, a 350 kilometre power cable that will link Tasmania to the Australian mainland across Bass Strait, has been used as a case study to undertake the task of tracing the translations that intervened between assessment process inputs and outputs – contributions deemed 'scientific' and 'independent' by the project's proponents and supporters. Specifically, the knowledge claims tendered by Hydro Tasmania, Tasmania's hydro-electricity generator, in respect of predicted environmental impacts on the Gordon River arising from changes to river flows required to generate and export hydro-electricity across Basslink, have been examined. The central epistemological question has been how, given the extent of the contingencies and indeterminacies in predictive economic and environmental modelling inputs and outputs used to substantiate the impacts and benefits of Basslink (which have been detailed in the thesis), was Hydro Tasmania's case in support of the development made durable and, thereby, legitimated by the decision-making body charged with the task of assessing the project. This study follows Hydro Tasmania's knowledge claims in respect of the Gordon River impacts through the process and demonstrates the pivotal role of narratives and the extent to which they can bridge empirical gaps, explain and obscure inconsistencies, erase unexpected model outputs, contextualise findings and mobilise ontological claims. The tension between the fulfilment of disclosure

requirements upon proponents by means of 'scientific facts' and the extent to which issues such as trust, accountability and past track record, bear upon people's uptake of these 'facts' is also examined in this work.

ACKNOWLEDGMENTS

There are, of course, many people to acknowledge for their valuable contributions in helping to bring this project to completion. In the first instance, though, my move from Sydney to Hobart and this work would not have been possible without the Australian Postgraduate Award. For this, I am especially grateful.

From within the Centre for Environmental Studies, I'd like to thank my supervisor, Peter Hay, for his intuition and understanding of what must have appeared, at times, to be a student going round-and-round in circles. For enriching my academic experience and for caring so much, I'd like to give thanks to Elaine Stratford. Thank you, too, to John Todd for his archival treasures. I must also mention two friends and colleagues. First, Andrew Harwood, whose questioning of my theoretical ideas prompted considerable reflection. Although I came back to my starting point, it was well worth the trip. Second, Colin Winkler, who was always so generous with his time, particularly on computer matters. I would also like to acknowledge the many other wonderful friends I have made during my time at the Centre, particularly Denbeigh, Julie, Elizabeth, Peat, James, Greg, Jo, Dave, Emma, Kete and Mary, without whom my time there would have been greatly diminished.

Having had access to the tape recordings of the Basslink hearings taken by the Resource Planning and Development Commission was vital for the project. In this respect, I'd like to thank the Executive Commissioner, Julian Green, as well as the staff of the RPDC who always managed to find a place for me to do my work. I enjoyed, very much, the conversations that took place with the people from the RPDC who wandered past my door.

I'd also like to thank Steven Halliday, Michael Connarty and Helen Locher from Hydro Tasmania for their prompt attention to my queries. The wealth of information provided by Ralph Mitchell from the Tasmanian Fishing Industry Council and Dagmar Nordberg on marine issues was also very much appreciated. I am also grateful to the many people with whom I came in contact at the public hearings, who provided information or answered queries, especially David Jeffrey, Peter Davies, Bruce Davis, Stuart Morris, Margaret Blakers, Helen Gee and Michael Kirlew.

There were so many others that I called on for assistance and who gave it gladly; among them were, Alan Pears, Bill Dockrill, Taylor Bildstein, Daniel Cooper, Andrew

Durran, Andrea Bunting, Gavan McDonell, Ben Northcott, Gabrielle Kuiper, David Miller and Hugh Outhred.

Last, but not least, I'd like to thank my partner, Arthur, who has had to endure what accompanies a research project such as this, and our daughter, Laina, who has had to tolerate some absences in the first months of her life.

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GLOSSARY OF TERMS

AEA	Australian EcoGeneration Association
AM	Adaptive Management
ANT	Actor Network Theory
BCSE	Business Council for Sustainable Energy
BDB	Basslink Development Board
BPL	Basslink Pty Limited
CAAP	Combined Approvals and Assessment Process
COAG	Council of Australian Governments
CREA	Centre for Regional Economic Analysis
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DIIAS	Draft Integrated Impact Assessment Statement
DPIWE	Department of Primary Industries, Water and Environment (an agency of the Tasmanian State government).
ECITA	Environment, Communications, Information Technology and the Arts Senate Committee
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPBC Act	*Environment Protection and Biodiversity Conservation Act* 1999 (Commonwealth legislation).
EMPC Act	*Environmental Management and Pollution Control Act* 1994 (Tasmanian legislation).
EPA	Environment Protection Agency
EPIP Act	*Environment Protection (Impact of Proposals) Act* 1974 (Commonwealth legislation).
GCM	Global Circulation Models
HEC	Hydro-Electric Corporation
HECEC	Hydro-Electric Commission Enterprises Corporation
HT	Hydro Tasmania

HVDC	High Voltage Direct Current
IES	Intelligent Energy Systems
IIAS	Integrated Impact Assessment Statement
JKMRC	Julius Kruttschnitt Mineral Research Centre
JAP	Joint Advisory Panel
LWM	Low Water Mark
MW	Megawatt (= 1,000 kilowatts of electricity generation)
MWh	Megawatt hour (use of 1,000 kilowatts of electricity per hour)
MRET	Mandatory Renewable Energy Target
NCP	National Competition Policy
NEM	National Electricity Market
NEMMCO	National Electricity Market Management Company
NGIL	National Grid International Limited
NGG	National Grid Group
NGMC	National Grid Management Council
NIEIR	National Institute of Economic and Industry Research
ORER	Office of Renewable Energy Regulator
PMSEIC	Prime Minister's Science, Engineering and Innovation Council
POSS	Project of State Significance
REC	Renewable Energy Certificate
RGP	Real Gross Product
RMPS	Resource Management and Planning System (Tasmanian legislation)
RPDC	Resource Planning and Development Commission
SAFMA	*State Authorities Financial Management Act* 1990
SECV	State Electricity Commission of Victoria
SOEB	State Owned Energy Businesses
SOO	Statement of Opportunities (issued annually by NEMMCO)
SP&P Act	*State Policies and Projects Act* 1993 (Tasmanian legislation)
SRMC	Short Run Marginal Cost
STS	Science and Technology Studies
SYSOP	SYStems OPeration model
TCCI	Tasmanian Chamber of Commerce and Industry
TEMSIM	Tasmanian Electricity Market Simulation Model

TFIC	Tasmanian Fishing Industry Council
TNGP	Tasmanian Natural Gas Project
TWWHA	Tasmanian Wilderness World Heritage Area
TWWHMP	Tasmanian Wilderness World Heritage Management Plan
VPX	Victorian Power Exchange
WHA	World Heritage Area
WHPC Act	*World Heritage Properties Conservation Act* 1983